

CECOM Material Safety Data Sheet

MG: Magnesium battery, para. 4-9

1. PRODUCT AND MANUFACTURER:

Item Identification:

National Stock Number:

Type Number:

Common Name: Magnesium battery

Contract Number:

Hazardous Characteristic Code: J8

(for Agency use ONLY)

Weight of Item(pounds):

Item Dimensions (inches):

Manufacturer's Identification:

Manufacturer's Name and Address

and ZIP code :

Preparer's Federal Supply Code (CAGE): 81349

Preparer: USA Communications-Electronics Command

Directorate of Safety Risk Management

ATTN: AMSEL-SF-SEP

Ft. Monmouth, New Jersey 07703-5024

Emergency & Information telephone numbers: CML: 732-427-3112, DSN: 987-3112

800-793-4093

2. COMPOSITION OF ITEM:

Hazardous & Nonhazardous Components (Chemical Name, (Symbol), and [CAS#])	Exposure Limits*		Other Recommended Limits	% by Item Weight
	OSHA PEL	ACGIH		
Magnesium-aluminum alloy		---		~10-15
Manganese dioxide (MnO ₂)[1313-13-9]		0.2		~25-35
Magnesium perchlorate (Mg(ClO ₄) ₂)[10034-81-8]		---		~5-10
Barium Chromate (BaCrO ₄)[10294-40-3]		0.05		~0.5-1.5
Lithium Chromate (Li ₂ CrO ₄)[14307-35-8]		0.05		<0.01
Carbon, black (C), [1338-86-4]		3.5		~5-10

* All values reported in mg/m³ unless otherwise specified.

3. PHYSICAL AND CHEMICAL PROPERTIES: N/A for item

Boiling Point: Melting Point:

Vapor Pressure(mmHg): Vapor Density(Air=1):

Evaporation Rate (butyl acetate=1):

Solubility in Water: Specific Gravity(water=1):

pH:

Odor and Appearance:

4. STABILITY AND REACTIVITY:

Chemical Stability: Stable: ☒ Unstable:

Conditions to avoid: DO NOT attempt to recharge this battery. Do Not abuse, mutilate or short circuit the battery.

Incompatibility: Store in separate stacks from hazardous materials.

Hazardous Decomposition Products: When exposed to extreme heat/fire batteries may rupture leaking corrosive material and/or emit toxic fumes. Burning batteries may emit toxic fumes of barium chromate and magnesium oxide.

Hazardous Polymerization: May Occur: Will not Occur: ☒

Conditions to avoid:

5. HEALTH HAZARD IDENTIFICATION:

Emergency Overview (including **Signs** and **Symptoms, Route(s) of Entry**, etc.)

Intact batteries present no specific hazards.

Acute Health Hazards (e.g., Inhalation, Eye Contact, Skin Contact, Ingestion, etc.):

Burning batteries: AVOID inhalation of toxic fumes. Burning batteries emit toxic fumes, which are irritating to the lungs.

Leaking batteries: AVOID exposure to leaking electrolyte, it can cause severe irritation and/or damage to the skin, mucous membrane or eyes.

Chronic Health Effects (e.g., Carcinogenicity, Teratology, Reproduction, Mutagenicity, etc.):

Chromates: Human carcinogenic agent.

Medical Conditions Generally Aggravated by Exposure: None.

6. FIRST AID MEASURES:

Inhalation: If battery is burning, leave the area immediately. If exposed to fumes, seek medical attention promptly.

Skin Contact: If battery electrolyte leaks on to the skin flush the affected area for at least 15 minutes with clean water. DO NOT attempt to neutralize. Seek medical attention promptly.

7. FIRE FIGHTING and EXPLOSION HAZARD DATA:

Flammable Properties: N/A

Flashpoint: Method:

Autoignition Temperature:

Flammable Limits: N/A

Lower flammable limit: Upper flammable limit:

Hazardous Combustion Products: Burning batteries may emit toxic fumes of barium chromate and magnesium oxide.

Extinguishing Media: Carbon dioxide (CO₂) or dry chemical fire extinguisher, 10-B:C.

Fire Fighting Instructions:

Personnel: Fight the fire in a defensive mode, while exiting the area. When using a CO₂ fire extinguisher, DO NOT re-enter the area until it has been thoroughly ventilated (i.e., purged) of the CO₂ extinguishing agent.

Firefighters: Use a self-contained breathing apparatus (SCBA).

8. ACCIDENTAL RELEASE MEASURES:

Small Spill: If batteries show signs of leaking, AVOID skin or eye contact with the material leaking from the battery. Use chemical resistant rubber gloves and non-flammable absorbent materials for clean-up. Coordinate disposition with the Installation Environmental Office.

9. HANDLING AND STORAGE:

Handling: DO NOT:

- Attempt to recharge this battery.
- Abuse, mutilate or short circuit the battery.

Storage: Gain approval for storage areas from the Installation Fire Department. Store batteries in a cool (i.e., <130°F), dry and well ventilated area.

DO NOT:

- Store batteries in direct sunlight or under hot conditions.
- Smoke and keep batteries away from open flame or heat.
- Store batteries in the same stacks with other hazardous materials.
- Store batteries in office areas, or other areas where personnel congregate.

Work/Hygienic Practices: Thoroughly wash hands after cleaning-up a battery spill (i.e., leaking or venting batteries). NO eating, drinking or smoking in battery storage areas.

10. EXPOSURE CONTROL/PERSONAL PROTECTION EQUIPMENT:

Engineering Controls:

General Exhaust: Local Exhaust:

Special: If the battery is damaged and leaking, protect hands with chemical resistant rubber gloves. If the battery is burning, leave the area immediately.

Protective Equipment :

Respiratory Protection: During fire fighting firemen should use SCBA.

Skin Protection: Use chemical resistant rubber gloves, when cleaning-up leaking batteries.

11. DISPOSAL CONSIDERATIONS/ECOLOGICAL INFORMATION:

Waste Disposal Method: DO NOT incinerate.

1. Magnesium batteries with $\leq 50\%$ remaining charge (i.e., more than or equal to 50% discharged) are not hazardous waste (HW) under Resource Conservation and Recovery Act (RCRA) regulations. Discharged batteries are NHSW under bioassay criteria.

2. Batteries with a $>50\%$ remaining charge (i.e., less than 50% discharged) are HW (i.e., D007) under RCRA.

3. Coordinate battery disposition and disposal with the Installation Environmental Office and the servicing Defense Reutilization and Marketing Office. All batteries will be managed IAW equipment TM requirements, and disposal will be IAW requirements under the Universal Waste Rule (USEPA), state and local regulations.

12. TRANSPORTATION INFORMATION: Magnesium batteries are not regulated under the federal hazardous materials provisions of 49 Code of Federal Regulations (CFR) part 172.101.

Procedures: Securely package batteries to withstand conditions normal to shipping. Protect batteries against short circuiting.

Special Precautions: Isolate and remove damaged and/or leaking batteries, if possible. Notify local health, safety and environmental agencies.